WHAT IS CLAIMED IS:

1. A method for fabricating a semiconductor device having at least one thin film transistor comprising a channel region and a gate electrode, comprising the steps of:

forming a semiconductor film comprising an amorphous silicon over a substrate; and

irradiating said semiconductor film with a laser light having a rectangular irradiation area while relatively moving said laser light along a scan direction,

wherein said scan direction is parallel to said channel region.

2. The method of claim 1, wherein said laser light is irradiated from an upper side of said gate electrode.

3. The method of claim 1, further comprising a step of heating said semiconductor film.

4. The method of claim 3, wherein said semiconductor film further comprise a metal.

5. The method of claim 1, wherein said thin film transistor is a top-gate type thin film transistor.

6. The method of claim 1, wherein said laser light is a pulsed excimer laser.

7. The method of claim 6, wherein said step of irradiating comprises pulsing said excimer laser ten times.

8. The method of claim 1, wherein said thin film transistor is used as one of a column driver and a scan driver.

9. The method of claim 1, further comprising the step of introducing a dopant impurity to said semiconductor film before said step of irradiating

10 A method for fabricating a thin film transistor device having a polycrystalline semiconductor thin film to form a channel regions, and a gate electrode which intersects the channel region, comprising the steps of:

providing a structure comprising a semiconductor thin film separated by a gate insulating layer from a gate electrode on an insulating substrate; and

irradiating the semiconductor thin film with a laser light having a rectangular irradiation area while relatively moving said laser light along a scan direction which is parallel to the channel region.

11. The method of claim 10, wherein said gate electrode is irradiated on an upper side.

12. The method of claim 10, wherein said irradiating step comprises moving the laser light.

13. The method of claim 10, wherein said irradiating step comprises partially overlapping irradiation of the laser light.

14. The method of claim 10, further comprising the step of heating said semiconductor thin film.

15. The method of claim 14, wherein said semiconductor thin film comprises a metal.

16. The method of claim 10, wherein said thin film transistor is top-gate type thin film transistor.

17. The method of claim 10, wherein said laser light is a pulsed excimer laser.

18 The method of claim 17, wherein said step of irradiating comprises pulsing said excimer laser ten times.

19. The method of claim 10, wherein said thin film transistor is used as one of a column driver and a scan driver.

20. The method of claim 10, further comprising the step introducing a dopant impurity to said semiconductor thin film before said irradiating step.

21. A method for fabricating a thin film transistor device having a polycrystalline semiconductor thin film to form a channel region, and a gate electrode which intersects the channel region, comprising the steps of:

providing a structure comprising a semiconductor thin film separated by a gate insulating layer from a gate electrode on an insulating substrate;

introducing a dopant impurity to said semiconductor thin film; and

irradiating the semiconductor thin film with a laser light having a rectangular irradiation area while relatively moving said laser light along a scan direction which is parallel to the channel region in order to activate said dopant impurity.

22. The method of claim 21, wherein said gate electrode is irradiated on an upper side.

23. The method of claim 21, wherein said irradiating step comprises moving the laser light.

24. The method of claim 21, wherein said irradiating step comprises partially overlapping the laser light.

25. The method of claim 21, further comprising the step of heating said semiconductor thin film.

26. The method of claim 25, wherein said semiconductor thin film comprises a metal.

27. The method of claim 21, wherein said thin film transistor is a top-gate type thin film transistor.

28. The method of claim 21, wherein said laser light is pulsed excimer laser.

29. The method of claim 28, wherein said step of irradiating comprises pulsing said excimer laser ten times.

30. The method of claim 21, wherein said thin film transistor is used as one of a column driver and a scan driver.

31. A method for fabricating a thin film transistor device having a polycrystalline semiconductor thin film to form a channel region, and a gate electrode which intersects the channel region, comprising the steps of:

forming a structure comprising an amorphous semiconductor thin film separated by a gate insulating layer from a gate electrode on an insulating substrate; and

irradiating the amorphous semiconductor thin film with an energy beam having a rectangular irradiation area to convert the amorphous semiconductor thin film into a polycrystalline semiconductor thin film while relatively moving said energy beam along a scan direction which is orthogonal to the gate electrode and is parallel to the channel region.

32. A method according to claim 31, wherein said irradiation step is a process for irradiating an amorphous semiconductor thin film to form a polycrystalline semiconductor thin film of the thin film transistor connected to a pixel electrode formed on the insulating substrate.

33. A method according to claim 31, wherein said irradiation step is a process for irradiating an amorphous semiconductor thin film to form a polycrystalline semiconductor thin film of the thin film transistor comprised of peripheral driving circuit for an active matrix array.

34. A method according to claim 31, wherein said irradiation step is performed by moving the energy beam.

35. A method according to 31, wherein said irradiation step is performed by partially overlapping irradiation of energy beam.

36. A method according to claim 31, further comprising steps of forming source and drain regions which comprise doping an impurity to the polycrystalline semiconductor thin film and activating the doped impurity by irradiating an energy beam.

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